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A MODEL FOR INTEGRATED SOFTWARE TO IMPROVE COMMUNICATION POLICY IN DENTAL TECHNICAL LABS

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ABSTRACT

Introduction: Integrated marketing communications (IMC) are all kinds of communications between organisations and customers, partners, other organisations and society.

Aim: To develop and present an integrated software model, which can improve the effectiveness of communications in dental technical services.

Material and Methods: The model of integrated software is based on recommendations of a total of 700 respondents (students of dental technology, dental physicians, dental technicians and patients of dental technical laboratories) in Northeastern Bulgaria.

Results and Discussion: We present the benefits of future integrated software to improve the communication policy in the dental technical laboratory that meets the needs of fast cooperation and well-built communicative network between dental physicians, dental technicians, patients and students.

Conclusion: The use of integrated communications could be a powerful unified approach to improving the communication policy between all players at the market of dental technical services.

Keywords: marketing communications, integrated software, dental technical laboratories

INTRODUCTION

Integrated marketing communications (IMC) represent communications between organisations and customers, partners, other organisations and society. IMC constitute a comprehensive integration of communication messages to target audience by means of various communicative instruments and combine all elements of the marketing communication mix – advertising, sales promotions, direct marketing, presentations, retail support [1], marketing public relations, sponsorships, and others [2, 3]. These tools are inte-

grated to achieve organisation's marketing communication objectives and to enhance the equity of its brands. The result is synergy – all elements of marketing communication working together to produce effective IMC [2].

The development of the economy and the use of modern devices and methods of communication (including the field of healthcare) have resulted in the saturation of the audience with various messages and have created an opposition to the attempts of the business organisations to transmit their new messages to the potential customers. To coordinate and integrate activities is not an easy task and demands time. The organisations should organise their activities according to customers and not according to offered product or service.

Aim

The current study tries to develop and present an integrated software model, which can improve the effectiveness of integrated communications in the dental technical laboratory. It is based on the theoretical and methodological principles of the IMC and the analysis of attitude of dental physicians, dental technicians, patients and students of dental technology,

MATERIALS AND METHODS

A total of 700 respondents, distributed into three groups - students of dental technology, dental physicians and dental technicians, were interviewed using direct anonymous questionnaires in the period between April and July 2015. The study was conducted on the territory of North-eastern Bulgaria in the cities of Varna, Dobrich, Razgrad, Russe, Silistra, Targovishte and Shumen.

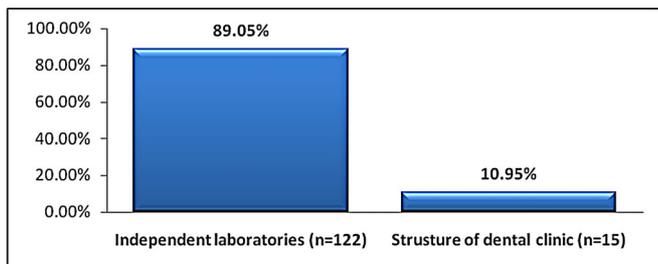
RESULTS AND DISCUSSION

System organisation of dental laboratory services in North-eastern Bulgaria

The majority of dental technicians responded that

they practised in independent labs (89,05%, n=122), which obviously delayed the communication process with the dental clinic and/or the dental physicians (Figure 1). The remaining 10,95% (n=15) practised in laboratories – part of a dental clinic, which significantly shortened the process of communication and respectively had an impact on the time for the dental construction production.

Fig. 1. Status of dental technical laboratories in North eastern Bulgaria (Varna, Dobrich, Shumen)



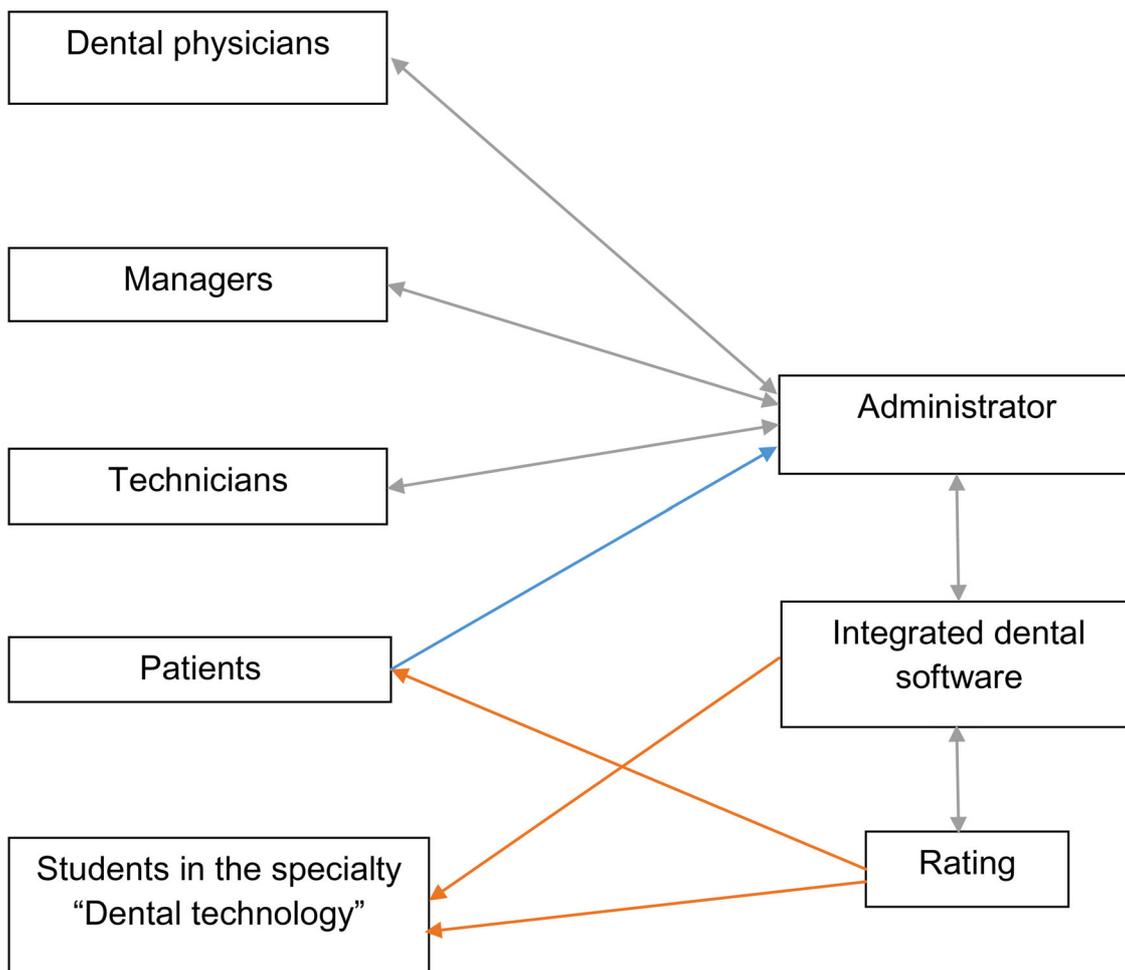
To improve the communication policy between the dental technical lab and dental clinics, most of the dental technicians recommended the introduction of specialised software and the use of digitalization in the process of communication.

A model for integrated software for communication policy improvement in the dental technical laboratory

The use of media advertising is not a typical element of the communication policy of the dental technical laboratories. The laboratories using this approach are limited in number because this activity costs higher and is difficult to bear by the majority of the dental labs, as they have a small structure and a limited budget. The main approach used by the dental technicians is direct advertising and advertising from mouth to mouth. They rely on the advertisement made by their clients to their colleagues during their work. The main means is the quality of the produced constructions – the physicians share with their colleagues the higher quality of the offered prosthetic construction, and this subsequently expands the number of laboratory customers.

Newly established dental technical laboratories have two routes to enter the market of dental services: (1) the first direction is to attract younger specialists in dental services who are about to graduate and (2) to use modern techniques in dental technology practice which are not used by the other laboratories. Such new practice is to introduce specialised software to meet the needs for fast cooperation between dental physicians, dental technicians, patients and students (Figure 2).

Figure 2. Integrated software for dental technical laboratories



In order to enter the created system, one has to register with a user's name and a password and obtain the approval of the administrator. After having registered and entered the system, **the dental physicians** will be able to see the medico-technical laboratories (dental technical) in the city and in the whole country, together with their rating. By means of the specialised software they will be able to:

- Introduce the patient's data, dental status, previously produced reconstructions, treatment necessary at that stage of the patient's visit to the dentist;

- Establish a plan for treatment with instructions and specific guidelines to the lab for the production of a dental prosthesis, for example: alloys to which the patient does not have evidence for allergies, colour casting of the construction photographed with a standard colour-key, colour shot with equipment for individual colour determination by zones, requirements for the profile of the bridge body, construction hygiene, borders of the prosthetic field and many others;

- Submit a file with photo material about the status before initiation of treatment, shot with a colour selected from a standard colouring next to a patient's tooth for visual comparison as well as specification of the size and shape of the new reconstruction planned and approved with the patient;

- Submit data about registration and individual values of the motion of the lower jaw in relation to the planes of orientation;

- Describe the reprints scanned from the patient as a material, time for production, disinfectants used, type and size of the factory spoons to be returned to practice;

- Submit the X-ray file with an indication of the approximate contact points corresponding to the bone ridge and the alveolar ridge together with clarification about the type of contact;

- Set deadlines for execution taking into consideration the deadlines set by the dental technical lab;

- Prices and way of payment;

- Stages of production with intermediate tests by dates and appointments;

- Data about the conducted patient's allergy investigations.

Following the accurate entering of the data, an electronic "receipt-order" with a number is generated to the lab. Provided that the lab uses an integrated software, the physicians will be able to coordinate the submission of orders with the deadlines according to the laboratory workload and the possibility of fast and express execution, if necessary, with the respective percentage extra payment.

By using the specialised software **the dental technicians and their practices (medico- technical laboratories)** will have the possibility to:

- Follow their working schedule;

- Plan and distribute effectively their working time;

- Observe the requirements and keep the deadlines for the production of dental prosthetic constructions according to the plan for treatment prepared by the dental physicians and the business of the lab;

- Complete a check list with the materials required

according to the plan for the production of the aid (dental prosthetic construction);

- Maintain an archive for every patient about the time during which the medical device was worked out and handed together with the materials, the colour schemes for entrustment and layers of the esthetic part, store the digital information from the machine data;

- Ensure visibility about the payments and delays of payments to the dental physicians;

- Enter comments and additional clarifications with those planning the treatment with the dental physicians;

- Create a plan for the stages in the work of the technicians at the lab for the fulfilment of the order as well as the full control;

- Forward files with the plan for the construction among colleagues who have the equipment for the cutting or printing with a digital file as subcontractors;

- After the dental technician's work is completed the software generates a hard copy about the quality of the materials used in the dental aid device, its colour and the technologies observed as appropriate, regimens and processes for the issue of a quality certificate and a warrantee card.

The laboratory manager will have the opportunity to submit information in the software about the working vacancies, vacancies for interns' admission, the equipment and technologies employed by the lab.

The patients – before they undergo treatment they will be able to obtain a hard copy generated by the software with a code and information containing:

- Personal data;

- Planned treatment;

- Draft agreement for the production of the dental device;

- Investigations performed concerning allergies and general diseases;

- Deadlines and intermediate test for the production of the dental device;

- Production variants according to aesthetics and pricing;

- Price of the production of the dental device;

- Ways of payment;

- Guidelines for the proper cleaning and maintenance of the dental device;

- Warrant and terms of warrant invalidity.

After the completion of the treatment according to the individual code generated by the software, the patient will have the opportunity to complete a short questionnaire electronically available on the internet and workable via "smart devices", to determine the rating of the dental physician, the rating of the dental technical lab about the quality of the dental device execution as well as recommendation for the quality improvement of the delivery of this type of medical services.

The students of dental technology – having obtained approval by the administrator, they will be able to use the software to examine treatment plans, photos with access permitted by the dental physician, the dental technician and the administrator, photos of the ready dental device as well as the rating of the laboratories. This will help them make

their decision and express their wish when applying for an internship (according to the vacancies) and assess the internship they have passed in the respective laboratory.

For those **customers** who have come to use the software by chance it will provide information about the following:

- The rating of the dental physician's practice, formed by the opinion of the final customer – the patient;
- The rating of the dental lab - formed by the dental physician and the patient;
- The rating of the dental lab according to the trainees or the students.

CONCLUSION

Based on the data about the application of IMC, we present a model of integrated software to improve the communication policy in the dental technical laboratory. The integrated communications present a unified approach using different kinds of instruments: advertising, public relations (PR), personal sales, sales promotions and others. The desired synergy is attained when all the IMC instruments are synchronised and mutually enhanced.

Abbreviations list:

IMC– Integrated marketing communications

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